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ABSTRACT

States are implementing standards-based reforms because of past failures to produce educational environments that ensure high academic achievement. The development of state standards, the availability of related curriculum documents, assessing student achievement, and institutional accountability measures have been some of the most effective strategies affecting districts' efforts to build school capacity. This report argues, however, that the blueprint for the standards-based reform movement lacks a foundation. Unless states use their newly established, more rigorous standards to build that foundation, the probability for success of the current standards-based reforms is no better than that of previous reform movements. States must develop preservice teacher education and professional development programs that provide teachers with the skills and knowledge required to teach to the higher standard. (Contains 32 references.) (DFR)

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ED 443 188

Special Report

on

Standards, Assessment, Accountability, and Interventions

for the

Edna McConnell Clark Foundation

Report #2 Fall 1999

Part of the Blueprint for Standards-Based Reform is Missing: Where is the Foundation?

by Patricia Cloud Duttweiler

and

Nichole S. Robinson

Every child needs—and deserves—dedicated, outstanding teachers, who know their subject matter, are effectively trained, and know how to teach to high standards and to make learning come alive for students.

President Clinton

September 1996

Standards-Based Reform

The Promise of Standards-Based Reform

States are implementing standards-based reforms in reaction to the failure of past efforts to produce educational environments that ensure high academic achievement for all students. The standards-based reform movement holds great promise. The development of state standards, the availability of related curriculum documents, assessing student achievement, and instituting accountability measures have been some of the most effective strategies affecting districts' efforts to build school capacity according to a study by the Consortium for Policy Research in Education (CPRE) (Massell & Goertz, 1999). In the second year of a three-year study of eight states involved in standards-based reform, CPRE researchers found that people in most of the districts they studied believed that state standards, testing,and accountability were focusing their efforts and influencing their choices about professional development, curriculum, instruction, and targeted interventions. The study has found (a) a determination to align curriculum and instruction to state standards and (b) a focus on basing decisions on analyses of student achievement and other performance measures.

The districts, however, expressed some concerns about their schools' capacity to accomplish their goals. One of the greatest needs cited by respondents was to

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help teachers and administrators better understand how to use student achievement data to improve what is happening in the schools and classrooms. One respondent said, "One of our biggest challenges...is to help schools look at student achievement indicators and connect them back to what they are doing, what they aren't doing...." The districts expressed additional concerns about coordinating professional development activities, making them coherent and reinforce common goals, and insuring the quality of professional development (Massell & Goertz, 1999).

Building a Foundation

When all is said and done, standards must ultimately translate into classroom practices before they can improve student performance and achievement. Reformers want teachers to revolutionize their practice—to coach and facilitate rather than to pour knowledge into passive brains. At some level, teachers must buy into the process of reform and perceive themselves as learners and the school as a community of learners. Yet, public education in the United States contains few social and professional structures that help teachers adopt these perceptions and continue to learn about teaching and learning (Cohen, 1996). More importantly, few states have constructed a policy blueprint that addresses—in a cohesive, coherent, and sustainable manner—the conditions affecting student learning: teacher standards, professional development, or school capacity (Hirsch, Koppich, & Knapp, 1998).

This Special Report is the second in a series of four special reports for the Edna McConnell Clark Foundation. This report argues that the blueprint for the standards-based reform movement lacks a foundation. Unless states use their newly established, more rigorous standards to build that foundation, the probability for success of the current standards-based reforms is no better than that of previous reform movements. *To ensure a firm foundation for reform, states must develop preservice teacher education and professional development programs that provide teachers with the skills and knowledge required to teach to the higher standards.*

Purpose of the Special Reports

Special Report #1, *Putting the Cart Before the Horses*, provided a brief overview of the standards-based reform movement and included the following: establishing standards, assessing those standards, holding schools and students accountable for meeting the standards, teaching to the standards, and providing interventions to students who do not meet the standards. It argued that holding students accountable for passing assessments of standards is premature, that teachers should be trained to teach new standards-based curricula, and that interventions should be in place to help students who fail assessments of the standards.

This special report will focus on building school capacity, on the importance of teacher competency in fostering student achievement, and on providing effective professional development for teachers. Two future special reports will (1) discuss effective interventions to help students pass assessments of the standards and (2) review the critical issues of the standards-based reform movement.

Building School Capacity

The Demand for Accountability

With new state standards in place, local schools are now being held accountable in ways they have not been in the past (Fuhrman, 1999). Nineteen states have made graduation from high school contingent on passing the new assessments. Seven more have passed similar requirements that will take place in 2003 (Education Week, 1999). For example, the governor of California signed a bill this spring requiring high school students to pass an exit exam in order to graduate. The bill also created a ranking system that will reward schools that improve and penalize those that do not (Kollars, 1999).

Other states have established stringent accountability systems. Under Virginia's school accountability plan, a school will lose its state accreditation unless 70% of its students pass a battery of tests in each of four subjects—English, math, science, and history—by 2007. Starting with the class of 2004, students must pass the tests to earn a high school diploma. In the first round of high-stakes testing, however, 97% of the schools failed to meet the performance goals linked to the state's Standards of Learning, and only 39 of the state's 1,500 schools met the requirements of the new state tests. In the Norfolk, VA, school district, where only a handful of schools passed, Marian Flickinger, president of the Norfolk Federation of Teachers, said teachers in the district will need considerable help from the state if the schools are going to significantly raise test scores (Portner, 1999).

Variability in Capacity

It is clear that schools vary in their response to accountability systems, and that variation is strongly associated with existing school and teacher capacities. Accountability systems as currently designed, however, do not work directly on the issues of school or teacher capacity. They have not addressed teacher competencies and school conditions that affect student achievement. The accountability systems apparently operate on the assumption that (1) schools already possess the capacity, but do not have the will to meet the goals, or (2) once the goals are clear and consequences are attached, schools will develop the capacity they need to meet the goals (Fuhrman, 1999). The constraints on some schools may be so overwhelming, however, that without strong leadership, outside technical assistance, and focused professional development the schools cannot improve their students' academic performance.

For example, in an article from *The Sacramento Bee*, Kollars (1999) points out the disturbing gaps between the new legislative mandates in California and the capacity of the public schools to carry out those mandates. At Golden State Middle School in West Sacramento, about half the students are eligible for free or reduced meals. One-third of the students are at various stages of learning English, and the school has a high student transient rate. The school's eighth-graders perform on average at the nation's 38th percentile in reading and at the 35th percentile in math, a record not far below statewide averages. The reporter's visit to the school revealed long-standing problems that constrain the school's ability to raise those averages. These problems included an acute shortage of qualified math and science teachers, a school building in which the newest teachers are forced to move from classroom to classroom in order to teach, a lack of text books for each student, a shortage of paper on which to copy material for students to use in lieu of text books, and a school day too short to allow teachers to cover the required minutes for the subject matter.

Low Expectations

Many schools and teachers have low expectations not only for their students, but also for themselves. The Consortium for Policy Research in Education (CPRE) (Fuhrman, 1999) is studying schools in San Francisco and Chicago that are operating under severe sanctions (reconstitution and probation). CPRE found the major emphasis in these schools was on test preparation. The schools were characterized by a focus on order and control and by low expectations for student learning. These schools did not appear to be making fundamental changes in their core processes or making concerted efforts to rethink their instructional program through collective deliberation or targeted management decisions.

In the CPRE sample, teachers' opinions about their own capacity and that of their students determined what, if anything, was done to improve performance. These opinions were powerfully influenced by teachers' preconceptions about the individual traits of their students, the characteristics of students' families, and the communities from which the students came. Rarely were the opinions based on knowledge of what the students might be capable of learning under different conditions of teaching and learning. In these schools, teachers assigned the most powerful cause of student academic performance to factors over which they, as teachers, had little or no control—family background. They assigned the least powerful cause to those factors over which they have the greatest control—the conditions of teaching and learning in the classroom.

CPRE researchers drew the following conclusion from their investigation (Fuhrman, 1999):

> The idea that a school will improve its instructional practice, and therefore the overall performance of its students, implies a capacity for collective deliberation and action that schools operating in the typical mode observed by this CPRE study did not display. (p. 8)

What Is School Capacity?

In its research on the potential of professional development to improve student achievement in traditionally low-achieving, high-poverty schools, the Wisconsin Center for Education Research adopted a concept of school capacity (Youngs, 1999). Schools with a strong capacity have the following:

1. teachers who have knowledge, skills, and dispositions related to curriculum, pedagogy, assessment, classroom management, and expectations for students;

2. a strong school professional community characterized by shared goals for student learning, meaningful collaboration among faculty, problem solving and teacher participation in decision making; and
3. school programs that are coherent, focused, and sustained over time.

There are obviously other aspects of school capacity not covered by the above three dimensions: policies that promote change and improvement, administrative support from the district and state, facilitative school leadership, community and parent involvement, adequate resources and facilities, school and class size, and the freedom to use the resources to meet the needs of the school's student population. The three dimensions above, however, are susceptible to improvement through professional development and are key elements in improving student academic performance (King & Newmann, 1999).

It is clear from the CPRE research cited previously that capacity-building efforts must address teachers' conceptions of their own accountability. While teacher knowledge and skills are important, teacher expectations about student learning determine how the knowledge and skills are used. As CPRE found in its 20-school study of internal accountability, many schools have no collective sense of responsibility for students' learning, and individual teachers are strongly influenced by what they believe their students can or cannot do. They also found that many teachers had no experience with students from disadvantaged backgrounds who were given opportunities to learn challenging material. Part of building capacity, therefore, is giving teachers such experiences and showing them how their students can learn to high standards (Fuhrman, 1999).

Teacher Competencies and Student Achievement

Teacher Quality

With nearly 10,000 uncertified teachers alone in New York City and 29,000 unlicensed teachers in California, there are discrepancies between the current workforce and the need to implement more rigorous standards and reforms (Edelman, 1999). It is unrealistic to expect that designing more sophisticated reform strategies and introducing them into a system that is not organized to engage in change will result in anything other than another ineffective reform (Fullan, 1993). Unfortunately, teachers' limited knowledge and skills are a major reason why most instruction has remained relatively didactic and routine for generations. Teachers are expected to apply reforms with little knowledge of the sorts of instruction the reforms require. Too few teachers have the personal and professional resources with which to monitor their own activity, to be aware of their own inappropriate work, or to take corrective action on their own initiative (Cohen, 1996).

How many of the nation's educators feel competent to educate tomorrow's youth using the standards that are currently in place? Four out of five teachers say they are not ready to teach in today's classrooms. Furthermore, more than a third say they either do not have degrees in the subjects they teach or feel they did not spend sufficient time studying content matter (McQueen, 1999). With the current system, student achievement scores nationally have decreased from average to below average levels due partially to inadequate teacher preparation and insufficient levels of content knowledge. In 1998, the U.S. Department of Education found that fewer than 75% percent of America's teachers could be considered fully qualified—fully qualified meaning that teachers have studied child development, learning, and teaching methods; hold a degree in their subject areas; and have passed state licensure requirements.

What defines "high-quality" as a characteristic of teaching? The National Board for Professional Teaching Standards (NBPTS) was established as a result of a call from the Carnegie Task Force on Teaching as a Profession for an organization to define high and rigorous standards for what accomplished teachers should know and be able to do ("What Teachers Should Know and Be Able to Do," 1999). According to NBPTS, accomplished teachers possess characteristics that effectively enhance student learning and display high levels of knowledge, skills, abilities, and commitments. Five characteristics must be cultivated in order to increase the number of high quality teachers who can meet the demand for higher student achievement. These five characteristics include the following ("The Five Propositions of Accomplished Teachers," 1999):

1. **Teachers are committed to students and their learning**—High quality teachers know

where the latest resources are found and make them accessible so students can gain new knowledge about different subjects. This gives high-quality teachers the ability to direct students in researching their academic interests. The teacher is also dedicated to knowing the student as an individual: knowing about the student's interests, abilities, skills, peer relationships, and family circumstances. With commitment to students, teachers develop activities and strategies that foster individuality and develop the students' cognitive capacities for learning.

2. **Teachers know the subjects they teach and how to teach those subjects to students**—High-quality teachers have a rich understanding of their specialized subjects and know how this understanding links to other disciplines and real-world settings. They also know the preconceptions and background knowledge of students and present instructional materials that provide further assistance and understanding. Deep knowledge content allows teachers to create multiple paths to teaching subject matter that is practical and interesting to students.
3. **Teachers are responsible for managing and monitoring student learning**—Teachers create, enrich, maintain, and alter instructional settings to capture students' interests and know how to engage students in order to ensure a disciplined learning environment. Individual progress as well as class performance is assessed and teaching practices are modified to motivate the students based on these assessments.
4. **Teachers think systematically about their practice and learn from experience**—Accomplished teachers seek to inspire students. Characteristics such as curiosity, tolerance, honesty, fairness, respect for diversity, and appreciation of cultural differences serve as prerequisites for intellectual growth. Teachers seek to sharpen their judgements and adapt their teaching to new findings, theories, and ideas.
5. **Teachers are members of learning communities**—Accomplished teachers contribute collaboratively with other professionals to improve instructional policy, curriculum development, and staff development. Teachers are knowledgeable about community resources that can engage student involvement and help enhance student achievement.

The NBPTS has developed standards and assessments for advanced certification of accomplished teaching. NBPTS certification, for example, allows certified teachers in Fairfax County, Virginia, to receive required continuing education credits, and in New Orleans, teachers receive financial incentives to pursue NBPTS certification ("Reforms In Preservice Preparation Programs," 1999).

Other organizations that have set standards to improve the caliber of teaching include the Interstate New Teacher Assessment and Support Consortium (INTASC) and the National Council for the Accreditation of Teacher Education (NCATE). The INTASC is a consortium of more than thirty states and professional associations that develops new licensing standards for teachers. These standards outline what teachers need to know and be able to do to teach students new standards ("Investing In Quality Teaching," 1999). INTASC enables new and veteran teachers in states with a surplus of teachers to move easily to states that experience shortfalls in high-quality teachers (Darling-Hammond, 1999).

NCATE has developed new standards for teacher education and accredits all organizations that prepare teachers for the classroom. One example of NCATE at work was bringing together the college faculty of the University of Massachusetts at Amherst's secondary teacher education program (STEP) with the schools in four school districts to improve teacher education. In this program, each semester six to eight student teachers took a school-based seminar, studied pedagogy, and worked with mentor teachers ("Reforms In Preservice Preparation Programs," 1999). This type of approach has made student teachers better prepared for the classrooms. These three organizations, NCATE, NBPTS, and INTASC, with their sets of closely aligned standards, offer state policymakers the most powerful tools available for developing a high-quality teaching force ("Investing in Quality Teaching," 1999).

Linking Teacher Quality and Student Achievement

According to *Investing in Quality Teaching: State Level Strategies* (1999), recent research has shown that "teacher expertise is one of the single most impor-

tant determinants of student achievement." In *Good Teaching Matters: How Well-Qualified Teachers Can Close the Gap*, Haycock (1998) described several studies supporting the hypothesis that teacher quality is definitely linked to student achievement. The studies looked at teacher ties to achievement in the classroom, teacher effects on the ability of students to perform well on assessments, factors that influence student learning such as teacher effectiveness, and the qualities that make an effective teacher. Studies from Tennessee, Texas, and Massachusetts have produced valuable information concerning teacher quality and its effect on student achievement. Studies conducted in Alabama and North Carolina found that higher-scoring teachers tended to be more likely to produce significant gains in student achievement. In addition, a positive correlation was found between teachers' degrees in technical subjects such as mathematics, physics, and biology and students' achievement. The research confirms that states and communities that choose to invest in well-qualified teachers also invest in an increase in student achievement.

In a study by Dr. William L. Sanders of the Value-Added Research and Assessment Center at the University of Tennessee, Knoxville, researchers grouped a sample of teachers from Tennessee in quintiles based their effects on the learning of both high- and low-achieving students. These studies revealed a significant increase in the achievement of low-achieving students by as much as 53% when they were taught by a highly-effective teacher. This is in contrast to a maximum of a 14% increase by students taught by a less effective teacher. Students in the fifth-grade were still affected by the quality of their third-grade teacher. This study also looked at the sequence of teachers to which the students were assigned. There was a noticeable impact on percentile points depending on the sequence of teachers and the teachers' effectiveness. Dr. Sanders concluded this could potentially determine the difference between a remedial label versus placement in the accelerated or gifted track and the difference between entry into a selective college versus a lifetime at McDonalds (Haycock, 1998).

In Texas, researchers in the Dallas Independent School District completed a first-ever study of teachers' effects on student performance. Two groups of students with similar average reading scores were evaluated over the course of three years. One group was assigned three highly effective teachers in succession. An increase from the 59th percentile to the 76th percentile was observed. Meanwhile, the other group of students was taught by three ineffective teachers in succession, and their scores dropped from the 60th to the 42nd percentile by the end of sixth grade. This 35 percentile-point spread, the result of ineffective teachers, created a significant difference in student achievement, even though both groups of students started at the same average reading level. Similar findings were also observed in mathematics (Haycock, 1998).

In Boston, Massachusetts, Bain and Company conducted a study that investigated student achievement and teacher effectiveness in mathematics and reading at the high school level. This study revealed that tenth-grade students with ineffective teachers displayed no growth in reading and math; that is, there was not a significant difference in test scores over a one-year period. In mathematics, students with the top-third teachers scored beyond the national medium on standardized tests, showing a significant improvement in math skills (Haycock, 1998).

Ferguson and Ladd (1996) reported on a study of the effects of school inputs on student test scores in Alabama. The sample consisted of a cohort of 29,544 fourth grade students in 690 schools in 1990-91. They found that teacher test scores, teacher education, and class size affected student learning. The results of the study led the authors to conclude that teachers' skills are extremely important and exert a strong effect on student achievement.

The evidence clearly shows that there is a pressing need for highly qualified teachers in every classroom and at every level of learning. The evidence provided by these studies shows a positive relationship between teacher quality and student achievement. If standards-based reforms are to lead to an improvement in student achievement, building a foundation of teaching competency must be the states' number one priority. "Each dollar spent on improving teachers' qualifications nets greater gains in student learning than any other use of an education dollar" ("Investing In Quality Teaching," 1999).

What Can States and School Districts Do?

Steps need to be taken to respond to the shortfall in the pool of quality educators. Darling-Hammond (1999) addressed the need for producing more effective

teachers and offered states and school districts ten suggestions for correcting the inequitable distribution of highly-qualified teachers.

- Raising teacher standards while equalizing teacher salaries has been linked to eliminating shortages and improving teacher quality.
- Establishing licensing reciprocity across states will permit new and veteran teachers in states with a surplus to move to states with shortfalls.
- Granting licenses to out-of-state entrants who have achieved National Board Certification will provide incentives for others to develop their skills by pursuing board certification.
- Creating national recruitment initiatives, streamlining hiring procedures, and developing on-line information technologies would prove useful in the management of applications of teachers interested in moving.
- Creating service scholarship programs or programs that function like forgivable loans would provide incentives to high-ability candidates in shortage fields.
- Expanding teacher education programs in high-need fields through incentives from federal and state governments would expand the number of positions available in shortage fields and ensure that programs are available for candidates.
- Providing incentives for the establishment of more extended teacher education programs would result, in the long run, in retaining more teachers. Studies show that teachers in extended programs tend to remain in teaching at higher rates than do teachers in a traditional four-year program.
- Providing incentives for community college/college pathways would help prepare paraprofessionals for certification.
- Creating high quality induction programs for beginning teachers would provide expert mentors with released time to coach beginners in their first year on the job.
- "Just say no" to hiring unqualified teachers.

According to the Southern Regional Education Board, 70% of eighth-grade English classes across the Southeastern states are taught by teachers with a major in elementary education. Kentucky officials believe that much of the middle school achievement gap can be attributed to the lack of academic content training for middle school teachers. Therefore, Kentucky is mandating that one-third of Kentucky middle school teachers complete extra training in which they will earn the equivalent of a college minor in the specific field which they teach (Blackford, 1999).

Governor Gary Locke of Washington is proposing conditional scholarships of up to $3,000 annually for 200 outstanding teacher candidates in shortage areas such as math, science, and special education. Criteria needed to receive this award include a commitment of two years in a public school for every $3,000 received and maintaining a 3.0 grade point average. In Mississippi, teachers can be offered scholarships, special home loans, low-cost rental housing, and moving expenses to attract applicants with any teaching specialty (Bradley, 1999). California sponsors a program called the California New Teacher Project which was formed to reduce teacher dropout rates. Veteran teachers, who serve as mentors, help new teachers learn and understand state standards and practices. This support is confidential and helps new teachers adjust to the classroom (Halford, 1999).

A collaborative effort to generate money to increase the number of high quality teachers is taking place in the public schools of Southern and Central California. Vons/Pavilions supermarkets, the Los Angeles County Office of Education (LACOE), and the Thacher School of Ojai joined in a public-private partnership to create the Vons/Pavilion Grant to provide technology training for teachers in fourteen Southern California counties. The $6.1 million Vons/Pavilions Grant two-year project will provide in-school technology training for one week at no cost to 2,500 teachers.

The Von/Pavilions Teach the Teachers Collaborative at the Thacher School plans to send teachers back to school to learn new techniques, technologies, and develop educational materials for student use. The partnership has plans for teachers who successfully complete the program to train other teachers. This type of training will eventually lead to an exponential increase in the number of high-quality teachers, which in turn will lead to a positive impact on millions of students. This example is a win-win situation for all parties involved. The teachers will become better qualified to teach students, the students

will improve achievement scores, and there will be a more even distribution of high-quality teachers throughout the schools in the districts. Most importantly, this partnership sends a strong message that education is everyone's business ("Teach the Teachers," 1999).

Professional Development

Ineffective Practices

Most legislatures are just beginning to consider policies designed to ensure that teachers have the knowledge and skills necessary to help all students achieve at high levels. One requirement for a cohesive policy strategy is clear expectations for what teachers should know and be able to do in order to help students achieve the standards. Increasingly, state policymakers are realizing that state certification and licensing procedures are not sufficiently rigorous to prepare quality teachers and traditional professional development practices are rarely effective in improving the classroom practice of current teachers (Hirsch, Koppich, & Knapp, 1998).

Although nearly all public school teachers receive some sort of professional development each year, very few participate in the kinds of activities that are effective in changing classroom practices. The content, quality, and duration of professional development programs determine their ability to improve teaching practice and affect student achievement. Most professional development in the United States today, however, is fragmented, is not focused on curriculum for students, and does not afford teachers learning opportunities related to academic content or instruction. Teachers typically engage in a variety of short-term activities that comply with state or local recertification or continuing education requirements but which are rarely based on the school curriculum or on comprehensive plans to improve teaching and learning (Cohen & Hill, 1998). In many states, virtually any kind of formalized learning experience can count towards a teacher's recertification hours, even when such experiences have little relevance to content or teaching practice (Hirsch, Koppich, & Knapp, 1998).

In a policy paper designed to inform state policy for the improvement of teaching, the Center for the Study of Teacher Policy (CTP) found that while 96% of public school teachers reported participating in some sort of professional development activity in 1993-94, very few encountered the types of opportunities that promote significant and sustained professional learning. For example, only 30% of teachers participated in professional development that involved in-depth study in a specific field, and only 15% received nine hours or more of this type of training (Hirsch, Koppich, & Knapp, 1998).

Duration as well as type of activity appears to make a difference in how teachers perceive improvement in their classroom teaching and how well they feel prepared to accomplish certain tasks. A report from the National Center for Educational Statistics (1999), *Teacher Quality: A Report on the Preparation and Qualifications of Public School Teachers*, elicited information from teachers regarding their recent participation in professional development activities in the areas of technology, new methods of teaching, state or district curriculum or performance standards, and accommodating students from diverse linguistic or cultural backgrounds. Table 1 illustrates the extent to which teachers perceived that participation in professional development activities improved their classroom teaching depending on the amount of time spent in the activity. It appears that teachers who spent more time in a professional development activity perceived a greater improvement than those who spent less time.

However, it is important to note that, while the amount of time spent in professional development activities is important in effecting change, the content of that activity is even more important. In a study of state efforts to reform mathematics teaching and learning in California, the Consortium for Policy Research in Education (CPRE) found that time spent in special topics/issues workshops did not have the same results in classroom practice as content-focused professional development. Spending a greater number of hours in less content-focused workshops was not associated with more of the practices called for by state reforms. In addition, the study found no relationship between student achievement scores and schools scoring high on a conventional-professional-development-practice scale. The CPRE study confirmed that neither teachers' practices nor students' achievement was changed by most of the professional development experienced by most California teachers. The results of the study suggest that links between instructional policy and classroom practice may be expected when teachers' learning opportunities are characterized by the following (Cohen & Hill, 1998):

Table 1: Percent of full-time public school teachers indicating the extent to which participation in professional development activities in various content areas improved their classroom teaching, by number of hours spent in professional development in that content areas in the last 12 months: 1998.

Content Area	Improved my teaching			
	A lot	Moderately	Somewhat	Not at all
State or district curriculum and performance standards				
1 to 8 hours	7	34	44	15
More than 8 hours	20	39	31	10
Integration of educational technology in grade or subject taught				
1 to 8 hours	12	36	44	8
More than 8 hours	38	43	17	2
New instructional methods				
1 to 8 hours	12	43	40	6
More than 8 hours	39	41	18	2
In-depth study in the subject area of your main teaching assignment				
1 to 8 hours	12	47	38	3
More than 8 hours	41	41	17	1
Student performance assessment				
1 to 8 hours	10	37	45	7
More than 8 hours	35	41	20	3
Classroom management, including student discipline				
1 to 8 hours	13	39	40	8
More than 8 hours	40	41	14	5
Assessing needs of students with limited English proficiency or students from diverse cultural backgrounds				
1 to 8 hours	9	34	47	10
More than 8 hours	38	34	23	5

SOURCE: National Center for Educational Statistics (1999), *Teacher Quality: A Report on the Preparation and Qualifications of Public School Teachers.*

- are grounded in the curriculum that students study;
- are connected to several elements of instruction (for example, not only curriculum but also assessment); and
- are extended in time.

Components of Effective Professional Development

Research studies on improving educational outcomes for students have concluded that effective instructional environments depend upon well-trained, reflective teachers who are adequately supported in terms of professional development. Recent programs have focused on fostering professional communities of learners and lifelong support programs, embedding knowledge and skill acquisition within a framework of teacher growth and development, establishing collaborative programs, and conducting interactive research within a community of learners (Rueda, 1998). The Council for School Performance (1998) studied professional development in Georgia and found that, for it to have an impact on student achievement, professional development required long-term programs embedded in the school year, rather than a one-shot event; theory, demonstration, practice, and feedback, rather than a lecture on the strategy; collective study of student learning, rather than individual reflection on implementation; and a workplace structured by leadership to support ongoing collaboration about improving teaching and learning.

The U.S. Department of Education established a Professional Development Team to examine the best available research and exemplary practices related to professional development. The team developed a set of principles designed to inform practitioners and policymakers. The mission of professional development is to prepare and support educators to help all students achieve high standards of learning and development. High-quality professional development incorporates the following principles (U.S. Department of Education, 1998):

1. The program is focused on teachers as central to student learning, yet includes all other members of the school community.
2. The program is focused on individual, collegial, and organizational improvement.
3. The program respects and nurtures the intellectual and leadership capacities of teachers, principals, and others in the school community.
4. The program reflects the best available research and practice in teaching, learning, and leadership.
5. The program enables teachers to develop further expertise in subject content, teaching strategies, uses of technologies, and other essential elements in teaching to high standards.
6. The program promotes continuous inquiry and improvement in the daily life of schools.
7. The program is planned collaboratively by those who will participate in and facilitate that development.
8. The program requires substantial time and other resources.
9. The program is driven by a coherent and long-term plan.
10. The program is evaluated ultimately on the basis of its impact on teacher effectiveness and student learning, and this assessment guides subsequent professional development efforts.

Linking Professional Development to Student Achievement

In 1998, the state of Georgia appropriated over $35 million to address professional development needs in its schools and districts. The Council for School Performance investigated the connection between Georgia's investment in staff development and student achievement. The Council selected a sample of higher- and lower-achieving schools across the full range of socioeconomic status and gathered data on professional development in the schools. They then tested the extent to which the characteristics of professional development varied between the two groups of schools. The study found that professional development in both groups of schools had similar content and was provided by similar sources at similar times during the day and year. The major difference uncovered by the study was that in lower-achieving schools, professional development was considered an activity with little connection to classroom results while in the higher-achieving schools it was more an authentic collegial effort to improve student performance. In the higher-achieving schools, there was more collaboration on decisions about professional development, a greater focus on students and classroom teaching, more use of effective training processes, more support from school leadership, and a greater excitement about working together to find ways to have a greater effect on student learning (Council for School Performance, 1998).

The CPRE California study found that the content of teachers' professional development makes a difference in their classroom practice (Cohen & Hill, 1998). The study found that teachers who had opportunities to learn about the California Mathematics Framework reported more of the kind of practice supported by the reform. Schools in which teachers reported classroom practice that was more oriented to the Mathematics Framework had higher average student scores on the fourth grade 1994 California Learning Assessment System (CLAS) tests (after controlling for demographic characteristics of schools). The CPRE analysis suggests that standards-based reform can affect student performance if it broadly supports an integrated approach to school improvement—an approach that leads to the creation of better curriculum for students, that makes suitable provision for teachers to learn that curriculum, that focuses teaching on learning, and that thoughtfully links curriculum and assessment to teaching.

In Texas, the El Paso Collaborative for Excellence is a partnership between the University of Texas at El Paso (UTEP) and area public school districts. The purpose is to improve teaching and learning by improving teacher preparation and professional development. The university has increased content requirements in its

teacher-preparation programs and has improved the courses in the programs as a result of working with teachers in El Paso classrooms. El Paso classroom teachers can upgrade their knowledge of content and instruction through intensive training institutes at UTEP ("Improving Teaching in the Middle Grades," 1999).

As discussed in the first Special Report, *Do We Have the Cart Before the Horses?* (Duttweiler & McEvoy, 1999), the results of this community-wide effort are encouraging. El Paso is the fifth-poorest major metropolitan area in the United States, the student enrollment of the three school districts is more than 85% Hispanic, and two-thirds of the students qualify for federally subsidized school lunches. Yet nearly 60% of Hispanic students and 56% of African-American students passed all portions of the Texas Assessment of Academic Skills (TAAS). The number of schools identified as low-performing as a result of their students' TAAS scores has fallen from 15 to zero, and the number of exemplary schools, in which more than 90% of the students pass the state tests, has gone from a handful to more than 30 ("Raise the Bar," 1998).

State Efforts to Improve Professional Development

Many states have begun to address the lack of or low quality of professional development opportunities by implementing statewide professional development in more comprehensive and integrated ways. For example, efforts identified by the Center for the Study of Teaching Policy (CTP) included the following (Hirsch, Koppich, & Knapp, 1998):

1. Florida's legislature passed the School Community Professional Development Act in 1995 establishing collaborative partnerships among the State Education Agency, colleges and universities, school districts, individual schools, and consortiums to promote joint responsibility and coordination. The legislature allocated professional development funds to school districts at approximately $6 per student per year.
2. The Kentucky Education Reform Act of 1990 increased professional development activities and funding, requiring local school districts to provide four days of site-based professional development annually and provided $24 per student in funding for this purpose. Kentucky also requires the Department of Education to assist districts and schools in the development of long-term school improvement plans that include professional development strategies to address curriculum content.
3. North Carolina's Excellent Schools Act ordered the State Board of Education, in collaboration with the Board of Governors of the University of North Carolina, to identify and make recommendations regarding meaningful professional development programs—aligned with state education goals and directed toward improving student academic achievement—for professional public school employees.
4. Missouri's Outstanding Schools Act of 1993 established nine regional Professional Development Centers and mandated that one percent of total district budgets be set aside for school-based professional development.
5. Oklahoma mandated the Teacher Preparation Act of 1995 that called for eight specific areas of teacher competency for professional development to be created by the Oklahoma Commission on Teacher Preparation. In addition, Oklahoma created the Professional Development Revolving Fund to be used to develop and administer programs for teachers and administrators and authorized the creation of a Professional Development Institute in Reading to train elementary school teachers.
6. Washington State restricted the educational credits that teachers can use toward career advancement to courses that are directly related to a teacher's current or expected areas of instruction.

Exemplary Practices in Professional Development

The National Staff Development Council's (NSDC) *What Works in the Middle: Results-Based Staff Development* asserts the following (Killion, 1999):

> To face the complexities of educating middle-level students, teachers must engage in staff development that increases their knowledge and skills, challenges their beliefs and asssumptions about education.

> provides support and coaching to develop a comfort with new practices, and engages them as active participants in the study and reform of the school culture. (p. 6).

The NSDC's Results-Based Staff Development for the Middle Grades initiative identified 26 staff development efforts that enable middle-grade students and teachers to achieve high levels of learning (Killion, 1999). The programs covered a wide span of subject areas, in diverse settings, and provided evidence of increased student achievement. The publication contains descriptions of the programs, guidelines for selecting and/or designing professional development to improve student academic performance, and strategies for evaluating professional development programs.

Four criteria were used in selecting the programs included in the publication. The first criterion—evidence that the program increased student achievement—served as the most stringent of the criteria. Of the 500 programs originally identified, fewer than one-fifth met this criterion. Many of the 80 programs that survived the first criterion also met the second—a well-defined program. A large number of the programs used a training model of staff development, providing intensive two- to five-week workshops during the summer with follow-up classroom-based coaching, feedback, and ongoing support for participating teachers during the school year. Criterion three—content-specific programs—eliminated the second largest group of programs. The scarcity of programs meeting this criterion demonstrated the importance of tailoring professional development to help teachers address new content standards. The last criterion—occurring at multiple sites—ensured that the programs were not dependent on unusually creative leadership or the characteristics of a specific school. Rather, these programs' accomplishments were related to the design of the staff development and could be replicated at other sites (Killion, 1999).

The 26 programs identified by NSDC included Language Arts professional development programs such as Student Team Literature and the National Writing Project. Examples of Mathematics programs included Rice University School Mathematics Project, the University of Illinois at Chicago's All Learn Mathematics, and the Peoria Urban Mathematics Plan. The publication also identified professional development programs such as the Student Watershed Research Project in science; We the People: The Citizen and the Constitution in social studies; and interdisciplinary programs such as Expeditionary Learning Outward Bound. Program descriptions, evaluation data, sample sites, and the name of a contact person are included in the program descriptions. To purchase a copy of this publication call the NSDC at 1-800-727-7288.

Promising Practices: New Ways to Improve Teacher Quality, a publication from the U.S. Department of Education (1998), contains profiles of practices in the areas listed below:

- Recruiting talented and diverse people into the teaching profession
- Improving teacher preparation
- Raising licensing and certification standards for teachers
- Providing professional support to beginning teachers during their initial teaching years
- Improving professional development
- Improving teacher accountability and incentives

The professional development programs presented in the document were nominated by regional education laboratories, reviews of research literature, and researchers for the National Commission on Teaching and America's Future. They do not, however, constitute a definitive list. Current efforts to ensure quality throughout the teaching profession are too dynamic and are happening in too many places to allow for a comprehensive evaluation (U.S. Department of Education, 1998).

In discussing professional development for teachers, *Promising Practices: New Ways to Improve Teacher Quality* presented two important tools for shaping such professional development that have emerged in recent years. One is the professional development school that replaces the traditional relationship between college campuses and K-12 schools. Professional development schools are partnerships in which the school is transformed into a clinical site dedicated to best practice and professional growth, while providing university faculty with knowledge from hands-on work in the school. The second development is teacher networking that allows teachers of like minds to get together to explore new ideas and new practices. In recent years, spurred by a

foundation-funded collaborative in math and the humanities, teacher networks have become a major force for professional growth (U.S. Department of Education, 1998).

The following is an excerpt of the San Francisco Professional Development initiative, which is described in greater detail in *Promising Practices: New Ways to Improve Teacher Quality*. In addition, the publication contains profiles of two other professional development programs, contact information for these programs and for the five 1996 exemplary efforts recognized by the U.S. Department of Education's National Awards Program for Model Professional Development. The entire document is available on the Internet (http://ed.gov/pubs/PromPractice/index.html). For information on the 1997-1998 awards, check the U.S. Department of Education's web site (http://ed.gov/inits/teachers/97-98/index.html).

The San Francisco Unified School District's Professional Development Initiative (PDI) focuses on the three core academic areas the district believes are most important for student success in the future—literacy, math, and science. The district wide initiative has set one goal to unify its efforts—all schools must be committed to improving all students' achievement in the core academic areas. The district provides whatever professional development teachers need to accomplish that goal and offers a package of opportunities which schools can tailor to meet their special needs. Individual teachers, district departments, and school sites must make professional development plans. In addition to eight district professional development days, school sites must find time for teachers to work together on professional growth, providing common preparation periods, substitute release time, or staggered schedules.

Teachers, administrators, and classified staff who have been identified as having expertise related to the student learning goals provide a variety of support services including modeling and coaching. Opportunities are also available that encourage individual and group leadership in professional development in areas such as organizing and leading forums on school and classroom changes, focus groups, and ongoing institutes. On-site support includes resources, content information, consultants, ideas for teaming and coaching, and other forms of professional development. Additional components in the initiative include: new teacher support, program support, and a Learning Resource Bank with professional resources and electronic links for school sites to libraries and universities.

A cadre of 26 schools serve as models for site-based professional development, sharing throughout the district the lessons they learn and the resources they develop. Another group, the Focus Schools, share common curricular themes such as environmental sciences or math and science, and they form networks for professional development.

This focused professional development produces results. Five years ago, 80% of the elementary teachers reported they taught science less than 30 minutes a week, middle schools averaged only one and one-half years of science, and only three high schools offered ninth-grade science. As a result of the professional development initiative, students are learning more science. Now elementary students receive an average of 140 minutes a week of science instruction and three years of science are included in the middle school curriculum. Student scores on standardized tests have increased significantly in reading and math for three consecutive years. In addition, teachers are using more interactive learning and whole schools are aligning curriculum and professional development to the district's standards. This documentation has been possible because San Francisco included an assessment component in its plan, a process to determine if the district's efforts in professional development pay off where it counts—in higher student achievement.

Conclusion

With the advent of new state academic standards, states are holding schools accountable for students' academic performance in ways they have not been in the past. Nevertheless, accountability systems as currently designed do not address the issues of teacher competencies and the school conditions that affect student achievement. The idea that a school will improve its instructional practice, and therefore the overall performance of its students, implies a capacity for collective deliberation and action that many schools do not have. It is unrealistic to expect that more sophisticated reform strategies introduced into a system that is not organized to engage in change will result in anything other than ineffective outcomes.

Recent research has shown that teacher expertise is one of the single most important determinants of student achievement. The evidence from studies conducted in Tennessee, Texas, Massachusetts, and Alabama shows a positive correlation between teacher quality and student achievement. Yet, more than a third of the teachers surveyed say they either do not have degrees in the subjects they teach or feel they did not spend sufficient time studying content matter. Furthermore, four out of five teachers say they are not prepared to teach in today's classrooms.

It is clear that the foundation for effective standards-based reform is missing. Teacher education programs do not prepare individuals for the realities of the classroom, state certification and licensing procedures are not sufficiently rigorous, and traditional professional development practices are rarely effective in improving classroom practice. These aspects of education must be the states' number one priority if standards-based reforms are to lead to an improvement in student achievement. In order to improve educational outcomes for students, effective instructional environments must have well-trained, reflective teachers who are adequately supported in terms of professional development. Each dollar spent on improving teachers' qualifications nets greater gains in student learning than any other use of an education dollar.

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Middle School Standards, Assessment, Accountability, and Interventions

This study of middle school standards, assessment, accountability, and interventions is funded by the **Edna McConnell Clark Foundation**

Goal of the Study

The goal of this study is to analyze the implementation of state and district mandated academic standards, assessment processes, accountability, and intervention strategies at the middle school level in order to identify and describe those intervention strategies that are effective in increasing the ability of middle school students in at-risk situations to achieve state or district academic standards.

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The National Dropout Prevention Center and Network

The National Dropout Prevention Center (NDPC)—a research center within the College of Health, Education, and Human Development at Clemson University, Clemson, SC—was created to significantly reduce America's dropout rate. It is committed to meeting the needs of youth in at-risk situations by shaping school environments which ensure that all youth receive the quality education to which they are entitled. The NDPC acts in concert with the National Dropout Prevention Network (NDPN)—a membership organization of more than 2,000 teachers, school administrators, state department of education staff, community organizations, and business leaders who are concerned with education issues. The Center/Network partnership has emerged as a highly visible national resource on at-risk and dropout issues. It publishes the refereed *Journal of At-Risk Issues*, a quarterly newsletter, the research-based *Solutions and Strategies* series, and other publications. It maintains a web page (www.dropoutprevention.org) and an e-mail listserver (ndpc@clemson.edu) that provide users with needed information and referrals quickly and easily through the Internet. The Center/Network partnership also provides professional development through its annual National Dropout Prevention Conference, annual America's At-Risk Youth National FORUM, and special regional conferences.

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